~~ENTERTAINMENT SYSTEM HAVING FUNCTION OF~~

~~CONTROLLING CONTENT DISTRIBUTION~~

SYSTEM FOR TRANSMITTING PROGRAM CONTENT DATA ACCORDING TO USER

PRIORITY OR NETWORK CONGESTION STATUS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001]   The present application claims priority from Japanese Patent Application Nos. 2000-336551 filed on November 2, 2000, and 2001-333463 filed on October 30, 2001, the disclosures of which are hereby incorporated by reference herein.

BACKGROUND OF THE INVENTION

[0002]   The present invention relates to an entertainment system and a server machine for distributing various ~~contents~~content data ~~such as~~for a video game, movie, news and music; a method for distributing such ~~contents~~content data; a computer program for distributing ~~contents~~content data; and a storage medium having recorded therein a computer program of a method for distributing ~~contents~~content data.

[0003]   Besides the conventional way of distributing music data, game programs or other ~~contents~~content data ~~in a form of being stored~~ ~~in~~stored on a storage medium such as CD-ROM, DVD-ROM and semiconductor memory, it is becoming popular to download content data ~~downloading~~ from a network using a personal computer of the user. ~~is becoming popular.~~

[0004]   More specifically, for a case of downloading ~~a~~desired ~~content~~content data, the user makes an access from ~~its~~the user's own personal computer using a web browser stored therein to a

1

predetermined server computer or "server machine"~~server machine~~, and sends a request for distributing the desired ~~content~~content data. The server machine then distributes the ~~content~~content data requested by the user via a network to the personal computer of such user. On the side of the personal computer, the ~~content~~content data distributed from the server machine is stored in a storage medium such as hard disk (HD). The user can thus obtain the desired ~~content~~content data without using a storage medium such as CD-ROM or DVD-ROM.

[0005] It is, however, often seen on the day of launching ~~a game content~~ distribution of content data for ~~of~~ a very popular game or for~~a~~ music ~~content~~content data of a popular musician ~~in boom~~ that a huge number of distribution requests are received at a server machine from the users ~~who want~~ wanting to obtain ~~it rush to the server machine~~the content data. Since the transmission band available for the ~~content~~content data distribution is limited, the conventional ~~content~~content data distribution system has suffered from saturation of the network transmission band (network congestion) when the distribution requests are concentrated. ~~,~~ ~~which~~This interferes with smooth ~~content~~content data distribution in the content distribution system.

SUMMARY OF THE INVENTION

[0006] The present invention was proposed to solve the foregoing problems, and an object thereof resides in providing an entertainment system, a server machine, a method for distributing ~~contents~~content data, and a storage medium having recorded therein a computer program of a method for distributing ~~contents~~content data,

all of which are aimed at preventing network congestion and ensuring

smooth ~~content~~content data distribution.

[0007]   To solve the foregoing problems, the present invention

introduced a   concept   of   "scheduled   ~~content~~content   data

distribution",   which   enables   ~~content~~content   data   distribution

according to a ~~content~~content data distribution schedule desired

by the users, or alternatively which is set ~~on~~at the convenience

of the server machine. ~~side.~~

[0008]   In the present invention, the ~~content~~content data

distribution   proceeds   according   to   the   ~~content~~content   data

distribution schedule, which is advantageous in preventing network

congestion and ensuring smooth ~~content~~content data distribution.

[0009]   Other and further objects and features of the present

invention   will   become   obvious   upon   understanding   of   the

illustrative embodiments about to be described in connection with

the accompanying drawings or will be indicated in the appended claims,

and various advantages not referred to herein will occur to one

skilled in the art upon employing of the invention in practice.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]   Fig. 1 is a block diagram of an entertainment system

according to an embodiment of the present invention;

[0011]   Fig. 2 is a block diagram of a domestic client terminal

device ~~composing~~included in the entertainment system;

[0012]   Fig. 3 is a flow chart ~~for explaining a~~illustrating

a process of schedule-governed downloading ~~proceeds in the~~

~~entertainment system~~in accordance with an embodiment of the

invention;

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MARKED UP SPECIFICATION

[0013]   Fig.   4   is   a   schematic   drawing   ~~for explaining~~illustrating a process of downloading ~~of a content~~content data ~~through~~to a domestic client terminal device ~~under~~via a pull-type of approach ~~connection in the entertainment system~~;

[0014]   Fig.   5   is   a   schematic   drawing   ~~for explaining~~illustrating a process of downloading ~~of a content~~content data from a server machine ~~under~~via a push-type approach ~~connection in the entertainment system~~;

[0015]   Fig. 6 is a flow chart ~~for explaining~~illustrating a process of downloading ~~of a content~~content data in the entertainment system~~, which is proceeded in response to~~ in accordance with a congestion status of a network and a member level of a user requesting the content;

[0016]   Fig. 7 is a drawing ~~for explaining~~illustrating a recording/reproduction region of a hard disk ~~provided to~~utilizable by the domestic client terminal device in the entertainment system;

[0017]   Fig. 8 is a drawing ~~for explaining~~illustrating a data constitution of ~~an~~archived ~~content~~content data downloaded into the domestic client terminal device;

[0018]   Figs. 9A, 9B, 9C, 9D and ~~to~~ 9E are drawings ~~for explaining write in~~illustrating storage and decoding of ~~the~~ archived ~~content~~content data downloaded into the domestic client terminal device in accordance with an embodiment of the invention;

[0019]   Fig. 10 is a drawing ~~for explaining~~illustrating a ~~massage~~message digest function value (MD) added to the archived ~~content~~content data or a system program; and

[0020]   Fig. 11 is a drawing ~~for explaining content~~ illustrating

4

content data distribution in the entertainment system based on the users' taste ~~in the entertainment system~~.

DETAILED DESCRIPTION

[0021]   Various embodiments of the present invention will be described with reference to the accompanying drawings. It is to be noted that the same or similar reference numerals are applied to the same or similar parts and elements throughout the drawings, and the description of the same or similar parts and elements will be omitted or simplified.

Entire System Constitution

[0022]   An entertainment system according to an embodiment of the present invention is composed of, as shown in Fig. 1, a domestic client terminal device 2 connected to a television image receiver 1 provided to each user's home, and a server machine 4 provided with a ~~contents~~content data database 3 storing various ~~contents~~content data such as video game, movie, news and music; both of which are connected with each other via a network ~~NW~~ such as can include a LAN (Local Area Network), ~~including internet~~the Internet, via ~~internet protocol~~Internet Protocol, through cable ~~internet~~Internet services, xDSL (x Digital Subscriber Line), Ethernet ~~and~~and/or token ring, ~~or~~and/or a WAN (Wide Area Network).

Constitution of Domestic Client Terminal Device

[0023]   The domestic client terminal device 2 comprises a main game unit 5 and a hard disk drive unit 6 (HDD unit).

[0024]   Fig. 2 is a block diagram showing a specific constitution of such main game unit 5 and the HDD unit 6. As is clear from Fig. 2, the main game unit 5 comprises a disk driver or

drive 11 for reproducing a program or data of a video game from a physical medium 10 such as a DVD-ROM or CD-ROM, a game execution section 12 for executing a video game based on the program or data of the video game reproduced by the disk driver or drive 11, a communication control section 13 for controlling communication of various ~~contents~~content data such as video game, movie, news and music, details of which will be described later, and a control section 9 for controlling an entire portion of the domestic client terminal device 2.

[0025]   The game execution section 12 is provided for forming a game image of a video game in response to operation of a controller by the user and outputting such image to the television image receiver 1 to display, by parallel rendering engine.

[0026]   The game execution section 12 is designed to reproduce sound of DVD video, CD and the like besides video game sound in order to provide such sound to the television image receiver 1.

[0027]   The communication control section 13 is provided for establishing a push-style or pull-style connection via the network NW to the server machine 4, to thereby control downloading of various ~~contents~~content data into the HDD unit 6.

Constitution of HDD Unit

[0028]   The HDD unit 6 mainly comprises a hard disk drive 16 (HDD) having a capacity of as large as 30 GB or 60 GB and a communication card slot 15.

[0029]   The HDD 16 stores system programs such as "downloader" and "extractor", and a predetermined user application program. The "downloader" is a program for downloading various ~~contents~~content

6

data by communicating with the server machine 4 on the network NW. The "extractor" is also a program for decoding the various ~~contents~~content data downloaded in an archived manner into a predetermined region of the HDD 16.

[0030]   The communication card slot 15 is a high-speed interface allowing insertional connection of a communication card 17 for telephone line or a communication card 20 for mobile phone. The communication card 17 for telephone line can be connected to a telephone line provided for a user's home via a modular cable 18 and a modular jack 19, by which wire communication is established between the domestic client terminal device 2 and the server machine 4. On the other hand, the communication card 20 for mobile phone can be connected to a mobile phone 22 via a communication cable 21, by which wireless communication is established between the domestic client terminal device 2 and the server machine 4.

[0031]   The entertainment system can support both ~~of~~ wire communication and wireless communication, and operations and effects thereof are similar in both communication modes except that the ~~content~~content data is downloaded via wire or ~~wireless wave~~wirelessly. It should now be noted that the description below deals with the system based on wireless communication as a representative case.

Downloading of ~~Contents~~Content data

[0032]   The entertainment system is available only after the user makes a monthly payment contract with a system administrator, always keeps the power switch ON even when a game is not played, and set the user's own domestic client terminal device 2 so as to

be connected to the server machine 4 using the communication card 17 for telephone line or the communication card 20 for mobile phone as shown in Fig. 2.

[0033] Such entertainment system allows downloading of various ~~contents~~content data according to a schedule set by the user or set on the server side.

[0034] For the case that various ~~contents~~content data are downloaded according to a schedule set on the server side, either downloading under so-called, pull-type connection or push-type connection is available, wherein the domestic client terminal device 2 accesses the server machine 4 in the former, and the server machine 4 accesses the domestic client terminal device 2 in the latter.

Downloading According to User-Set Schedule

[0035] A flow chart in Fig. 3 shows a process flow of downloading under the individual connection styles, in which a flow along step S1 → step S2 → step S8 → step S9 indicates a process flow until the downloading is completed according to a user-set schedule.

[0036] The process flow shown in Fig. 3 starts when a main power source of the domestic client terminal device 2 is turned ON by the user, which is followed by a process in step S1. In step S1, the control section 9 shown in Fig. 2, a main power source of which is turned ON, activates a boot application program stored in the HDD 16 of the HDD unit 6, and also activates "downloader" and "extractor", which is followed by a process in step S2.

[0037] In step S2, the control section 9 determines whether a schedule set by the user is present or not, and the process goes

8

to step S8 if the schedule is present (YES), and goes to step S3 if absent (NO).

[0038]   More specifically, when the user joins the system, the user will receive from the system administrator side a magazine or an e-mail which contains guide of ~~contents~~content data to be distributed, and schedule of their distribution period or time. Observing such schedule, the user selects ~~a~~ desired ~~content~~content data and enters using the controller 14 a desired date and time of downloading of such ~~content~~content data. The control section 9 manages an identification of the ~~content~~content data and the specified date and time of downloading as "a user-set schedule".

[0039]   When the date and time set by the user comes, the communication control section 13 makes, in step S8, the domestic client terminal device 2 access the server machine 4 based on the "downloader", and the process then goes to step S9. Thus in step S9, ~~a content~~content data selected by the user will be downloaded according to a schedule set by such user at the time specified by such user.

[0040]   The downloaded ~~content~~content data is supplied, under communication control by the communication control section 13, via the communication card 17 and the communication card slot 15 to the HDD 16, and is then stored under control of the control section 9 into a predetermined region (writable region in Fig. 7) of the HDD 16 described later.

Downloading under Pull-Type Connection

[0041]   Next, a process flow of downloading under the pull-type connection style according to a schedule set by the ~~server machine~~

4 ~~side~~server machine 4 will be described, in which the process flows
as step S1 → step S2 → step S3 → step S4 → step S5 → step S9.

[0042]   When it is determined in step S2 that the user-set
schedule is absent, the process goes to step S3. In step S3, it
is necessary to obtain a schedule according to which the domestic
client terminal device 2 operates, so that the communication control
section 13 discriminates whether the domestic client terminal
device 2 is set in a state accessible by the server machine 4 (that
is, whether the domestic client terminal device 2 is set so as to
accept "push" from the server machine 4), and the process goes to
step S6 if YES, or goes to step S4 if NO.

[0043]   ~~Setting of~~ The user can select whether to accept ~~the~~
"push"-type distribution from the server machine 4 ~~will be accepted~~
or not ~~can~~ interactively, ~~be done~~ as ~~being~~ as guided by an
interactive ~~type set screen~~ menu on the television image receiver
1 through operating the controller 14~~,~~. ~~where~~ The user is allowed
to select either ~~selection of~~ a "setting for accepting push delivery
from the server machine 4" or a "setting for refusing push delivery
from the server machine 4, and~~but~~ allowing only pull-type connection
to such server machine 4 from the domestic client terminal device
2". ~~is optional.~~

[0044]   For the case that the domestic client terminal device
2 has the "setting for accepting push delivery from the server
machine 4", the ~~discrimination~~ result in step S3 will be YES and
the process goes to step S6. ~~, and for~~ For the case that the domestic
client terminal device 2 has the "setting for refusing push delivery
from the server machine 4, ~~but~~ and allowing only pull-type connection

to such server machine 4 from the domestic client terminal device

2", the ~~discrimination~~ result in step S3 will be NO and the process

goes to step S4.

[0045]   In step S4, the communication control section 13 ~~makes~~

~~an access from~~ of the domestic client terminal device 2 ~~to~~ accesses

the server machine 4 ~~based on~~ using the "downloader" 16 since the

domestic client terminal device 2 is set so as to refuse ~~push~~

push-delivery of content data from the server machine 4. ~~, and~~ The

domestic client terminal device 2 downloads a schedule file prepared

on the ~~server machine 4 side~~ server machine 4 into the HDD 16. The

schedule file is not always common to all users but properly arranged

for the individual clients depending on taste or desire of the users,

details of which will be described later.

[0046]   The communication control section 13 is so designed to

~~make~~ access ~~to~~ the server machine 4 in a ~~periodical~~ periodic manner

(e.g., via polling), so that a latest schedule file can be downloaded

into the HDD 16 for every access.

[0047]   Next in step S5, the communication control section 13

~~makes an~~ accesses ~~to~~ the server machine 4 at the time scheduled on

the ~~server machine 4 side~~ server machine 4 according to the schedule

file obtained in step S4, and the process goes to step S9. Thus,

in step S9, ~~a content~~ content data selected by the user will be

downloaded into the HDD 16 according to a schedule set on the ~~server~~

~~machine 4 side~~ server machine 4 at the time specified on the ~~server~~

~~machine 4 side~~ server machine 4.

[0048]   Fig. 4 is a schematic drawing showing the downloading

of ~~content~~ content data under such pull-type connection. In such

drawing showing an exemplary case of downloading a~~~~game ~~content~~content data from the server machine 4, the individual domestic client terminal devices 2 at the individual users' homes A to D periodically ~~make~~access ~~to~~the server machine 4 to thereby download schedules determined on such ~~server machine 4 side~~server machine 4.

[0049]   In this exemplary case, allowable downloading time is assigned to each of the users' homes A to D, such as for example 19:00 for user's home A, 20:00 for user's home B, 21:00 for user's home C and 22:00 for user's home D.

[0050]   Thus the domestic client terminal device 2 at user's home A ~~makes an access~~accesses ~~to~~the server machine 4 at 19:00, by which a predetermined game ~~content~~content data is downloaded from such server machine 4 to the domestic client terminal device 2 at user's home A.

[0051]   Similarly, the individual domestic client terminal devices 2 at users' homes B, C and D ~~make~~access ~~to~~the server machine 4 at 20:00, 21:00 and 22:00, respectively, by which predetermined game ~~contents~~content data are downloaded from such server machine 4 to the individual domestic client terminals 2 at users' homes B, C and D, in a time differential manner.

[0052]   The downloaded ~~content~~content data is supplied, under communication control by the communication control section 13, via the communication card 17 and the communication card slot 15 to the HDD 16, and ~~is~~then stored under control of the control section 9 into a predetermined region (writable region in Fig. 7) of the HDD 16 described later.

[0053]   While the downloading time is adjusted for every user's home in the above exemplary case, it is also allowable that the downloading time is adjusted for every district among a plurality of districts served by the content distribution system.

[0054]   A network has only a limited traffic and the downloading may be disabled due to delayed communication speed or over-capacity of the communication line if a huge number of users ~~make accesses~~ access~~to~~ the server machine 4 at ~~a~~ the same time to request downloading of desired ~~contents~~content data. On the contrary, the assignment of the downloading time for the individual users (or the individual districts) and the adjustment of the downloading in a time differential manner as described in the above can make an effective use of the limitative traffic of the network and can thus ensure smooth downloading of desired ~~contents~~content data.

Downloading Under Push-type Connection

[0055]   A process flow along step S1 → step S2 → step S3 → step S6 → step S7 → step S9 in Fig. 3 indicates a process flow until the downloading under the push-type connection is completed according to a schedule set on the ~~server machine 4 side~~server machine 4.

[0056]   When it is determined in step S2 that the user-set schedule is absent, and is then further determined in step S3 that the domestic client terminal device 2 is set so as to accept "push" from the server machine 4, the process goes to step S6.

[0057]   In step S6, the communication control section 13 goes into a wait calling status since the domestic client terminal device 2 is set so as to accept "push" from the server machine 4, and the process goes to step S7 upon receiving calling from the server

13

machine 4.

[0058]   In step S7, the server machine 4 ~~makes~~ accesses individual domestic client terminal devices 2in a time differential manner ~~to the individual domestic client terminal devices 2~~ according to the schedules assigned for the individual users, and the process goes to step S9. The individual domestic client terminal devices 2 are set so as to accept connection ~~request~~ requests from the server machine 4 according to the "downloader", and ~~download~~ in step S9, upon establishing the connection, ~~content~~download content data distributed at the time scheduled on the ~~server machine 4 side~~server machine 4 into the HDD 16.

[0059]   Fig. 5 is a schematic drawing showing the ~~content~~content data distribution under the push-type connection. Fig. 5 shows an exemplary case in which a game ~~content~~content data is distributed from the server machine 4, where allowable downloading time is assigned to each of the users' homes A to D, such as for example 19:00 for user's home A, 20:00 for user's home B, 21:00 for user's home C and 22:00 for user's home D.

[0060]   Thus the server machine 4 ~~makes an access~~ accesses~~to~~ the domestic client terminal device 2 at user's home A at 19:00, by which ~~a~~predetermined game ~~content~~content data is downloaded from such server machine 4 to the domestic client terminal device 2 at user's home A.

[0061]   Similarly, the server machine 4 makes accesses to the individual domestic client terminal devices 2 at users' homes B, C and D at 20:00, 21:00 and 22:00, respectively, by which predetermined game ~~contents~~content data are downloaded from such

server machine 4 to the individual domestic client terminals 2 at users' homes B, C and D in a time differential manner.

[0062]   The downloaded ~~content~~content data is supplied, under communication control by the communication control section 13, via the communication card 17 and the communication card slot 15 to the HDD 16, and ~~is~~then stored under control of the control section 9 into a predetermined region (i.e., the writable region in Fig. 7) of the HDD 16 as described ~~later~~below.

[0063]   While the downloading time is adjusted for every user's home in the above exemplary case, it is also allowable that the downloading time is adjusted for every district.

[0064]   While in the foregoing described case of ~~the foregoing~~ downloading under the pull-type connection, it ~~was~~is necessary ~~to previously obtain on~~for the domestic client terminal device 2 ~~side~~to obtain a schedule ~~on~~from the ~~server machine 4 side~~server machine 4 prior to downloading content data, the downloading under such push-type connection does not require ~~previous obtainment of the schedule or schedule management on~~the domestic client terminal device 2 ~~side~~to obtain a schedule in advance or manage such schedule, since the schedule management is conducted using~~on~~ the ~~server machine 4 side~~server machine 4 and such server machine 4 ~~makes access to~~accesses a predetermined domestic client terminal device 2 to thereby distribute the ~~content~~content data when the specified time comes.

[0065]   This also allows ~~an effective use of~~ the ~~limitative~~limited traffic capacity of the network ~~and can thus ensure~~to be effectively used. Thus, smooth downloading of desired

~~contents~~content data can be assured since the downloading times are assigned for the individual users (or the individual districts) and the ~~contents~~content data are distributed in a time differential manner.

<u>Distribution Management for Schedule File and ~~Contents~~Content data</u>

[0066] In such entertainment system of this embodiment capable of distributing the schedule file and ~~contents~~content data in a time differential manner, the server machine 4 is designed to adjust the distribution time depending on the congestion status of the network and the member level of the users.

[0067] A flow chart in Fig. 6 shows a process flow of downloading the schedule file and the ~~contents~~content data from the server machine 4 to the domestic client terminal device 2 depending on the congestion status of the network and the member level of the users, in which a flow along step S11 → step S12 → step S13 → step S14 indicates a process flow of downloading when the network capacity is still available.

[0068] The process of the flow chart of Fig. 6 starts in the cases described below, which is followed by the process in step S11:

(1) a user-set schedule ~~was discriminated as~~<u>is</u> <u>determined to be</u> present in step S2 in Fig. 3, <u>and</u> an access ~~was~~ <u>is</u> made in step S8 from the domestic client terminal device 2 to the server machine 4 according to the user-set schedule, so that the server machine 4 is ready to distribute the ~~content~~<u>content data</u> in response to such access;

(2) a user-set schedule ~~was discriminated as~~<u>is</u> <u>determined to be</u> absent in step S2 in Fig. 3,<u>in step S3</u> the domestic

16

client terminal device 2 is ~~discriminated in step S3 as being~~determined to be set to refuse push delivery of content data from the server machine 4, and an access ~~was~~is made in step S4 from the domestic client terminal device 2 to the server machine 4, so that the server machine 4 is ready to distribute a schedule file in response to such access;

(3) a user-set schedule ~~was discriminated as~~is determined to be absent in step S2 in Fig. 3, in step S3 the domestic client terminal device 2 is ~~discriminated in step S3 as being~~determined to be set to refuse push delivery from the server machine 4, and an access ~~was~~is made in step S5 to the server machine 4 according to the schedule file obtained in step S4, so that the server machine 4 is ready to distribute the ~~content~~content data in response to such access; and

(4) a user-set schedule ~~was discriminated as~~is determined to be absent in step S2 in Fig. 3, in step S3 the domestic client terminal device 2 is ~~discriminated in step S3 as being~~determined to be set to accept push delivery from the server machine 4, and an access request issued from the server machine 4 is accepted by the domestic client terminal device 2 in steps S6 and S7, so that the server machine 4 is ready to distribute the ~~content~~content data in response to such access.

[0069]   In step S11, the server machine 4 first searches the current congestion status of the network servers, which is followed by the process in step S12.

[0070]   In step S12, the server machine 4 determines based on the current congestion status searched in step S11 whether the

17

network is currently congested or not, where the process goes to step S15 when the network is ~~not~~ congested (in the case of ~~NO~~YES), and goes to step S13 or step S14 when congested (in the case of ~~YES~~NO).

[0071]   Step S13 ~~will be reached for the case that~~is performed when the user-set schedule is absent, and the domestic client terminal device 2 ~~made an access~~accesses ~~to~~the server machine 4 in order to obtain a schedule file, or for the case that a distribution request for ~~a~~predetermined ~~content~~content data ~~was~~is issued from the domestic client terminal device 2 based on the obtained schedule file.

[0072]   In such step S13, the server machine 4 distributes the schedule file or ~~content~~content data in response to the request from the domestic client terminal device 2, since the network is not currently congested.

[0073]   ~~On the contrary~~Otherwise, step S14 ~~will be reached for the case that~~is performed when the user-set schedule is present. In such step S14, the server machine 4 distributes the schedule file or ~~content~~content data according to the user's desired schedule since the network is not currently congested.

[0074]   On the other hand, when it is determined that the network ~~was~~is congested ~~discriminated~~in step S12, ~~as being currently congested~~, the server machine 4 collates in step S15 the current congestion states of the network and of the server machine 4 itself with the member level of the user who issued the distribution request for the schedule file or ~~content,~~content data. ~~which is followed by the~~The process then continues at ~~in~~step S16.

[0075]   The member level is determined based on various factors

18

such as the number of ~~access~~ accesses by such user (access frequency),
communication speed of the communication line, priority of the
server machine 4 or the domestic client terminal device 2, and paid
charge (whether classified as a special member or a general member
depending on the paid charge). The member level is stored in a user
management database 7 shown in Fig. 1, and the server machine 4
properly reads out a member level of the relevant user from such
user management database 7 to thereby allow the collation in step
S15 to proceed.

[0076] In step S16, it is determined whether a member level
of the user currently issuing the distribution request for the
schedule file or ~~content~~ content data is high enough ~~or not is~~
~~discriminated~~ based on the collation result in step S15. ~~, where~~
~~the~~ The process goes to step S17 for the case the member level of
the user is high enough (for the case of YES), and goes to step S18
for the case the member level of the user is not high enough or low
(for the case of NO).

[0077] In step S17, the server machine 4 distributes the
schedule file or ~~content~~ content data to the user who is given ~~a~~
priority over other users irrespective of the current congestion
status of the network, since the member level of such user is high
enough.

[0078] ~~On the contrary~~ Otherwise in step S18, the server machine
4 ~~sends a notice for announcing impossibility in immediate~~
~~distribution to~~ notifies the domestic client terminal device 2 of
the user that immediate distribution is not possible, since the
member level of such user is low. ~~, where the~~ The notice typically

appears as "Distribution of the ~~content~~content data is not available due to network congestion. Distribution will start upon relieving the congestion. Sorry for waiting for a while.",~~which~~ The notice is followed by the process in step S19. Such notice is displayed on the television image receiver 1 after ~~being mediated~~handling by the domestic client terminal device 2 of the user. Thus, the user ~~issued~~who issues the distribution request recognizes the current congestion status of the network.

[0079] Even after issuing such notice, the server machine 4 continues ~~the~~to research ~~of~~the congestion status of the network. The distribution of the schedule file or ~~content~~content data is enabled in step S19 according to the schedule specified on the ~~server machine 4 side~~server machine 4 only after the congestion status of the network is relieved so as to match the member level of such user.

[0080] As has been described in the above, the entertainment system of this embodiment can regulate distribution of the schedule file or ~~content~~content data depending on the congestion status of the network and the member level of the user. This successfully prevents congestion of the network having ~~a~~limited capacity, and ensures an effective use thereof.

[0081] On the other hand, a prompt distribution of the schedule file or ~~content~~content data irrespective of the congestion status of the network is permitted to the users having higher member levels. Such discrimination of the users having higher member levels from the general users in the distribution of the schedule file or ~~content~~content data can ensure satisfaction of such special users having higher member levels.

[0082]   Such provision of the special service to the users having higher member levels is also advantageous in ~~that~~ promoting the use of such system, in that a user may join ~~joining to~~ the system as a special member rather than ~~not as~~ a general member, ~~and~~ ~~switching~~or switch from a general member to a special member.

Managing of Downloaded ~~Contents~~Content data

[0083]   The entertainment system of this embodiment manages the downloaded ~~content~~content data with the aid of a novel system constitution as described ~~in the~~ next.

Division of HDD Region

[0084]   The entire storage region of the HDD 16 of the entertainment system is divided into "system region", "writable region", "readable region" and "readable/writable region" as shown in Fig. 7. Among these, the "system region" and "writable region" hatched in the drawing are not accessible by the user application program and ~~is~~are only accessible by the system programs~~,~~ such as "downloader" and "extractor"~~,~~ of such entertainment system.

[0085]   On the contrary, the "readable region" and "readable/writable region" are accessible by any of the system programs such as "downloader" and "extractor"~~,~~ and the user application program.

[0086]   The "system region" stores the system programs such as "downloader" and "extractor", and ~~set~~settings data ~~referred~~ accessible by the system programs. The system programs stored in the "system region" cannot be ~~referred~~accessed by the user application program as described in the above.

[0087]   The "writable region", which allows ~~write-in and~~

~~read out~~read and write access using ~~a~~ system application programs, is a data storage area dedicated for such system application programs.

[0088]   The "readable region" is accessible both by the system application programs and the user application program, where ~~write in and read out are allowable~~read and write access is permitted through the system programs and only ~~read out is allowable~~ read access is permitted through the user application program.

[0089]   The "readable/writable region" allows ~~write in and read out through~~read and write access by both ~~of the~~ system application programs and user application program, where data written in the region ~~is~~may be completely erased at a timing not ~~participatable~~selected by the user application program. ~~when, for~~For example, such data is erased when the domestic client terminal device 2 is re-activated. Thus, the "readable/writable region" can be called a ~~said as a so-called~~"temporary data region".

Composition of ~~Content~~Content data

[0090]   The ~~content~~content data distributed from the server machine 4 is previously subjected to encryption and compression, to thereby have a secured archived style ~~of archiving~~ (archived ~~content~~content data). Examples of ~~contents~~content data distributable in an archived style include an application program ~~of~~for a game, additional data or patch data for a game, shareware (trial program), interactive commercial program, and moving picture data ~~of~~for news, a movie, ~~and~~or a commercial.

[0091]   Fig. 8 is a schematic drawing showing a constitution of such archived ~~content~~content data. As is clear from Fig. 8, the

archived ~~content~~content data comprises "an archive header", "information for decoding", "a program" and "data".

[0092]   Among these, information for the "archive header" is not encrypted nor compressed, and is reproducible without decoding or expansion. The "archive header" contains information indicating the identification of the archived ~~content~~content data, such that indicating that the ~~content~~content data is that ~~for~~of a commercial, a movie or the like.

[0093]   As is described in the above, information of the "archive header" is not encrypted nor compressed, and is reproducible without decoding or expansion, so that when the ~~content~~content data is downloaded into the HDD 16, only the "archive header" is reproduced and displayed for the user. The user then inspects the archive header and selects ~~contents~~content data while considering whether the archived ~~content~~content data is necessary or not. If the user considers ~~a~~ certain archived ~~content~~content data as necessary and completes predetermined procedures such as paying the charge therefor, the user will be given with a public key from the system administrator. The "information for decoding", "program" and "data" become reproducible with such public key, and the "program" and "data" are expanded and reproduced based on the "information for decoding" (together with the "archive header").

Decoding of Archived ~~Content~~Content data

[0094]   Figs. 9A to 9E are schematic drawings showing the decoding of such archived ~~content~~content data.

[0095]   For the case of such entertainment system, ~~an~~ archived ~~content~~content data is first downloaded from the server machine 4

23

into the HDD unit 6, and the "downloader" writes the downloaded archived ~~content~~content data into the "writable region" of the HDD 16, as shown in Fig. 9A.

[0096]   Since the archived ~~content~~content data written in the "writable region" is not accessible by the user application program as described in the above, the user cannot use such downloaded archived ~~content~~content data at this point of time.

[0097]   The "archive header" in the archived ~~content~~content data is, however, not encrypted ~~and~~nor compressed, so that it is reproducible by the user application program and can be displayed on the television image receiver 1. Thus the user can recognize only an outline of the archived ~~content~~content data downloaded into ~~its~~the user's own domestic client terminal device 2.

[0098]   Next, the user selects the archived ~~content~~content data based on the outline thereof. If the user determines the archived ~~content~~content data as unnecessary and specifies deletion of such ~~content~~content data through operation of the controller 14, the system program will delete the archived ~~content~~content data written in the "writable region" of the HDD 16.

[0099]   On the other hand, if the user determines the archived ~~content~~content data as necessary and completes predetermined procedures such as paying the charge therefor, the user will receive a public key from the system administrator, for example, under ~~in~~ sealed cover through a postal service or through transmission from the server machine 4 to the domestic client terminal device 2.

[0100]   When the public key is received through a postal service, the user operates the controller 14 to enter the public key. Upon

24

entering the public key, the "extractor" activates. Or, the "extractor" activates when the public key sent from the server machine 4 is received by the domestic client terminal device 2.

[0101]   The "extractor" conducts decoding correlative to the encryption given to the "information for decoding", "program" and "data" of the archived ~~content~~content data based on the public key, then expands and reproduces the "program" and "data" based on the decoded "information for decoding" (together with "archive header"), to thereby decode the "program" and "data", as "application", into the "writable region" of the HDD 16 as shown in Fig. 9B. The archived ~~content~~content data in the "writable region" is deleted after the decoding as shown in Fig. 9C.

[0102]   Upon completion of the decoding of "application" into the "writable region", the user application program then activates, by which the application decoded into the "writable region" is reproduced. Data generated by the user application program during such reproduction are written in the "readable/writable region" of the HDD 16 in a form of a "temporary data file" as shown in Fig. 9D.

[0103]   The "temporary data file" written in the "readable/writable region" is completely deleted later as shown in Fig. 9E, at a timing not ~~participable~~selected by the user application program. For ~~when, for~~ example, such file is erased when the domestic client terminal device 2 is re-activated.

[0104]   As has been described in the above, the entertainment system of this embodiment can distribute the ~~content~~content data from the server machine 4 to the domestic client terminal device 2 in a predetermined form of "secured archived ~~content~~content data",

which is advantageous in that ~~preventing a~~ it prevents untrustworthy ~~content~~content data, possibly infected with a virus, from being written ~~into~~to the HDD 16.

[0105]   The entertainment system of this embodiment is designed so that ~~contents~~content data are automatically downloaded into the HDD 16 irrespective of ~~that~~whether they are to be purchased or not, and only those for which the user ~~completed~~completes the purchasing procedure ~~will be~~are decoded to ~~be~~become available.~~, which~~ This is advantageous in that the user can decode and use the ~~content~~content data immediately after the completion of the purchasing procedure without having to request ~~requesting~~ the content data to be downloaded~~downloading~~.

[0106]   Since the ~~content~~content data ~~are~~is already downloaded into the HDD 16, it is ~~no more~~not necessary for the user to conduct complicated operations such ~~that~~as accessing the server machine in order to purchase the ~~content~~content data, and the user can install the content data without intentionally downloading such content, in a manner ~~(~~equivalent to the foregoing described decoding.~~) the content without intentionally downloading such content.~~

[0107]   Since the ~~contents~~content data are downloaded into the "writable region" to which the user application program ~~is not accessible for read-out or write-in, so that~~read and write access, the ~~contents~~content data cannot be decoded nor used unless otherwise the user completes the purchasing procedure and is given a public key from a system administrator. This successfully prevents unauthorized use (enjoyment) of the ~~contents~~content data.

[0108]   Among the ~~contents~~content data downloaded into the HDD 16, those not purchased are specified by the user through operating the controller 14 and deleted from the "writable region", so that undesirable accumulation of the unnecessary ~~contents~~content data in the "writable region" of the HDD 16 is ~~avoidable~~avoided.

[0109]   ~~By such~~Such entertainment system, ~~it may be~~makes it possible ~~that~~, for example, ~~contents~~for content data to be ~~are~~ downloaded into the user's domestic client terminal device 2 ~~while~~ without the user ~~being not~~ aware of it, such as during sleeping~~,~~. ~~and a desired content~~Desired content data can be decoded and ~~will~~ ~~become~~becomes available without ~~accessing~~the user needing to request access thereto from the server machine 4.   Thus the entertainment system impresses ~~will be impressed by~~the user as a quite surprising, convenient and absolutely novel one.

Message Digest Function Value

[0110]   As has been described referring to Fig. 8, the archived ~~content~~content data contains the "archive header", "information for decoding", "program" and "data", among which the "data" is added with a ~~massage~~message digest function value (MD) as shown in Fig. 10.   Such ~~massage~~message digest function value is also added individually to the system programs such as "downloader" and "extractor".

[0111]   When the application of the downloaded archived ~~content~~content data is decoded into the "readable region" of the HDD 16, the "downloader" checks data string of the application using the ~~massage~~message digest function value in a periodic or non-periodic manner.   If an unauthorizedly altered portion as shown

in Fig. 10 is detected, a message such as "The application has a sign of unauthorized alteration~" is displayed for the user, and the application remains unavailable until the unauthorizedly altered portion is corrected.

[0112]   The system programs such as "downloader" and "extractor" check their data strings using the message digest function values added thereto in a periodic or non-periodic manner. If an unauthorizedly altered portion is detected, a message such as "The system program has a sign of detected unauthorized alteration~" is displayed using such system programs for the user~. and variousVarious operations using such system programs, such as the downloading and decoding of the archived contentcontent data, are terminated until the unauthorizedly altered portion is corrected.

[0113]   This successfully prevents unauthorized use of various archived contentscontent data with the aid of an unauthorizedly altered program in the HDD 16. It is now also allowable to add a check-sum in place of the massagemessage digest function value, which will result in the same effect.

Collation of Message Digest Function Value and Public Key

[0114]   The entertainment system, thus, can detect unauthorized alteration of the system programs or user application program using the massagemessage digest function value. , but theHowever, unauthorized alteration in the system programs, for example, the system programs cannot be detected if the massagemessage digest function value *per se* is unauthorizedly altered.

[0115]   The encrypted archived ~~content~~content data is decoded using the public key provided from the system administrator and is decoded from the "writable region" into the "readable region" in the HDD 16.~~, where the archived content downloaded into the "writable region" can be used unauthorizedly and unlimitedly if the public key per se is unauthorizedly altered.~~ If the public key *per se* is altered without authorization, unlimited unauthorized use could be made of the archived content that is downloaded into the "writable region".

[0116]   To overcome such problems, the server machine 4 of the entertainment system is provided with an MD/public key database 8 for storing master data for the individual message digest function values (MDs) and the public key for the individual archived ~~contents~~content data. The domestic client terminal device 2 makes connection with the server machine 4 in a periodic or non-periodic manner based on the system programs, and collates the ~~massage~~message digest function value and the public key currently used with the master data of those stored in the MD/public key database 8.

[0117]   When a disagreement is detected between the ~~massage~~message digest function value or the public key currently used and the corresponding master data ~~thereof is detected~~, the application is disabled or the system operation of the device is terminated ~~assuming~~ on the assumption that the ~~massage~~message digest function value or the public key is unauthorizedly altered. This successfully prevents the unauthorized use of the archived ~~content~~content data downloaded into the "writable region" of the HDD 16 with the aid of the unauthorizedly altered ~~massage~~message

digest function value or the public key.

Installation from Physical Medium

[0118]   While in the above description of the embodiment the archived ~~content~~content data is downloaded by connecting the domestic client terminal device 2 to the server machine 4 via the network NW, it is also allowable to install the ~~content~~content data from the physical medium 10 such as a CD-ROM or DVD-ROM.

[0119]   The physical medium 10 in the above exemplary case contains a complete program as the archived ~~contents~~content data, where ~~storing~~it is also permitted to store only a part of the program. ~~is also allowable.~~ The physical medium 10 is distributed to the user free of charge or at low prices.

[0120]   The domestic client terminal device 2 is provided with the disk driver 11 as shown in Fig. 1. The disk driver 11 reproduces the individual archived content data recorded in such physical medium 10, upon being loaded with the physical medium 10,. ~~the individual archived contents recorded in such physical medium 10.~~ Based on the downloader, the~~The~~ control section 9 writes, ~~based on the "downloader",~~ the reproduced archived ~~contents~~content data into the "writable region" as shown in Fig. 7, ~~which refuses~~preventing the user application program from intervening~~to intervene~~. This enables ~~the installation of~~ the individual archived ~~contents~~content data to be installed into the HDD 16 without connecting the domestic client terminal device 2 to the server machine 4.

[0121]   For the case that the physical medium contains only a part of the program, the user who wants to purchase the complete program has to visit a shop to purchase, or to ask the system

administrator to send it by post. ~~On the contrary~~Alternatively,
the physical medium 10 distributed for such entertainment system
originally contains the complete program. In such case, ~~so that~~
the user can immediately use the program without visiting the shop
to purchase, ~~if only~~once the user is provided with the public key
from the system administrator.

[0122]   The same will apply to the case that a part of the program
is distributed through the network. The user who ~~received~~receives
a part of the program through the network has to make an access to
a predetermined server machine to download the complete program when
the user wants to purchase ~~it~~the program. ~~On the
contrary~~Alternatively, the archived ~~content~~content data
distributed for such entertainment system is originally archived
and distributed as a complete program. In such case, ~~so that~~ the
user can immediately use the complete program without having to
engage in a complicated ~~procedures~~procedure such as accessing ~~again~~
~~to the~~a predetermined server machine again, whenever the user is
~~if only~~ provided with the public key from the system administrator.

[0123]   For the case that a patch will be provided or data will
be added to the ~~content~~content data program already installed in
the domestic client terminal device 2, such patch data or additional
data may be distributed to the user in a form of being stored in
the physical medium 10. ~~Or it~~It is also allowable to distribute
such patch data or additional data from the server machine 4.

Updating of System Programs etc.

[0124]   The "downloader" and "extractor", which are system
programs stored in the HDD 16 of the domestic client terminal device

2, and public key are designed to be updated in a periodic or non-periodic manner.

[0125]   The updating is accomplished by ~~up-data~~updated information distributed to the user in a form of being stored in the physical medium 10 and reproduced by such user, or downloaded from the server machine 4 as one event of the downloading schedule.

[0126]   The physical medium 10 storing the ~~up-data~~updated information may be such ~~that containing~~ as to contain only the ~~up-data~~updated information to be distributed to the user, or may be a game disk added with the ~~up-data~~updated information added thereto.

[0127]   When the physical medium 10 storing the ~~up-data~~updated information is reproduced, the domestic client terminal device 2 compares a version of the system programs currently stored in the HDD 16 and a version of the ~~up-data~~updated information reproduced from the physical medium 10. If the version of the ~~up-data~~updated information reproduced from the physical medium 10 is found to be newer than that of the "downloader", "extractor" system programs or public keys currently stored in the HDD 16, such ~~up-data~~updated information reproduced from the physical medium 10 is written over the old "downloader", "extractor" stored in the HDD 16 or over the public keys. This successfully updates the system programs or public keys through off-line procedures.

[0128]   In such entertainment system, the user can include periodic or non-periodic downloading of the ~~up-data~~updated information in the downloading schedule. In the entertainment system, downloading of various ~~contents~~content data ~~is~~

~~proceeded~~proceeds according to the schedule defined by the user or the server machine 4, where the ~~up-data~~updated information can be distributed as ~~one~~a portion of such downloaded ~~contents~~content data.

[0129] When the ~~up-data~~updated information is downloaded, the domestic client terminal device 2 compares a version of the system programs currently stored in the HDD 16 ~~and~~with a version of the ~~downloaded up-data~~updated information that is downloaded. If the version of the ~~downloaded up-data~~updated information is found to be newer than that of the system programs currently stored in the HDD 16, ~~such downloaded up-data~~ the domestic client terminal device 2 writes the updated information ~~is written~~ over the old "downloader", "extractor" stored in the HDD 16 or over the public keys. This successfully updates the system programs or public keys ~~while~~ without the user ~~being not~~needing to be aware of it.

Style of Use of Entertainment System

[0130] Last of all, ~~a style of~~use of such entertainment system will be explained based on a specific example.

Distribution of Game ~~Content~~Content data

[0131] Assume now that a role playing game (RPG) is launched from the ~~side of the~~ system administrator. This RPG is very popular, for which purchase by a vast number of users is ~~prospected~~expected. Thus the server machine 4 distributes the archived ~~content~~content data of the RPG to the domestic client terminal devices 2 of the individual users based on a schedule specified by the user or set on the ~~server machine 4 side~~server machine 4 irrespective of intention of the purchase.

[0132]   The server machine 4 now distributes the archived ~~content~~content data depending on the congestion status of the network or the priority such as member level of the individual users, as previously explained referring to the flow chart in Fig. 6. When a plurality of users have a same priority, an expedient priority is generated using, for example, random numbers, and based on which the archived ~~content~~content data of the RPG is distributed in a time differential manner.

[0133]   More specifically, assume that one user has specified the active downloading of the RPG through operating the domestic client terminal device 2. The "downloader" of the domestic client terminal device 2 communicates, as instructed by the user, with the server machine 4 to thereby request downloading of the RPG. Upon receiving the request, the server machine 4 ~~refers to~~determines how much traffic is on the network. If the ~~traffic is~~server machine 4 ~~determined~~determines that the network is ~~as being~~congested, the RPG is distributed at dawn when the network congestion will be relieved, not immediately. This ensures the distribution of the RPG based on an effective use of the ~~limitative~~limited capacity of the network.

[0134]   Now a user having a high member level ~~can be~~ ~~benefited~~benefit by an immediate downloading as described in the above.

[0135]   The archived ~~content~~content data of the RPG distributed to the domestic client terminal devices 2 of the individual users is written into the "writable region" of the HDD 16, which can be ~~referred~~accessed only by the system programs (Fig. 9A). The

archived ~~content~~content data is decoded into the "readable region" of the HDD 16 only by using the public key provided by the system administrator upon completion of the purchasing procedures by the user.

[0136]   When the launching of a very popular game is announced, it is often seen that a lot of fans form a long queue at the storefront on the day of launching, and some of them even spend several nights at the storefront before the day of launching. On the other hand, the entertainment system distributes the game ~~content~~content data to the domestic client terminal devices 2 of the individual users irrespective of the intention of the purchase, and the decoding and use of the game are only permitted for those completing the purchasing procedures. Thus_, the users can enjoy the popular game without waiting in the queue at the storefront.

[0137]   This is also beneficial for the system administrator since it is ~~no more~~not necessary to use a physical medium such as CD-ROM or DVD-ROM in order to distribute the ~~content~~content data, which significantly ~~save~~saves cost for the ~~content~~content data distribution.

Distribution of Various ~~Contents~~Content data

[0138]   The ~~contents~~content data distributed from the server machine 4 in the entertainment system are by no means limited to game ~~contents~~content data. That is, the server machine 4 of this entertainment system is to distribute content data to the domestic client terminal devices 2, the content data containing , for example, news ~~content~~, ~~commercial~~ commercials ~~content~~ for ~~informing~~ announcing a sport event or concert, ~~information content of~~a new

35

movie and commercial ~~content~~content data ~~of new game daily~~for a daily
new game (or at regular intervals) ~~to the domestic client terminal~~
~~devices 2~~.

[0139]   Upon completion of the purchasing procedures by each
user, the server machine 4 analyzes the user's taste based on the
purchased ~~contents~~content data and accumulates the processed data
in a statistical database 25 shown in Fig. 1.

[0140]   The server machine 4 also issues a questionnaire when
the user joins this system or in a periodic (or non-periodic) manner
for ~~searching~~determining the taste of the user, analyzes the user's
taste based on the answers to the questionnaire and accumulates the
processed data in a statistical database 25 shown in Fig. 1.

[0141]   The ~~content~~content data to be distributed can also be
specified by the user, and the server machine 4 accumulates
information for indicating an identification of the ~~contents~~content
data specified by the user into the statistical database 25 shown
in Fig. 1.

[0142]   Thus the server machine 4 refers to the statistical
database 25 for every distribution of the ~~content~~content data to
the user, to thereby ensure distribution of ~~content~~content data is
well ~~matches~~matched to the user's taste.

[0143]   Fig. 11 is a schematic diagram showing ~~content~~content
data distribution based on the users' taste accumulated in such
statistical database 25.

[0144]   In Fig. 11, when the user at the user's home A completed
purchasing procedures for several kinds of sport games, such
purchasing history is accumulated in the statistical database 25.

The server machine 4 refers to the statistical database 25 when it distributes the ~~content~~content data to the user. Since the purchasing history of the user indicates that the user is fond of sports, the server machine 4 distributes ~~contents~~content data arranged ~~so as~~ to contain mainly ~~contain~~sport-related matters.

[0145] Similarly, when a questionnaire ~~was~~is issued to the user at the user's home B and the user ~~answered~~answers as being interested in fashion, such taste of the user at the user's home B is accumulated in the statistical database 25. The server machine 4 thus refers to the statistical database 25 and then distributes ~~contents~~content data arranged ~~so as~~ to contain mainly ~~contain~~ fashion-related matters to the user at the user's home B.

[0146] Similarly, when the user at the user's home C ~~requested~~ requests the distribution of movie-related ~~content~~content data, information indicating an identification of ~~content~~content data requested by the user is accumulated in the statistical database 25. The server machine 4 thus refers to the statistical database 25 and then distributes ~~contents~~content data arranged ~~so as~~to contain mainly ~~contain~~movie-related matters to the user at the user's home C.

[0147] For the case that the user at the user's home D has no special request for ~~contents~~content data, information corresponding to such user in the statistical database 25 remains blank or equivalent, so that the server machine 4 distributes ~~contents~~content data covering general information on sports, movie, news and the like to the user at the user's home D.

[0148] This ensures the ~~content~~content data distribution is

well ~~matches~~ matched to the users' tastes. From the users' points of view, only the ~~contents~~ content data in their own tastes or ~~(needs)~~ ~~can be~~ are downloaded.

[0149] While all of such ~~contents~~ content data may ~~be~~ ~~charged~~ bear a charge, some ~~contents~~ content data may more preferably be free of charge. In this entertainment system, content data for all of news ~~content,~~ ~~commercial content~~ commercials ~~for informing~~ announcing a sport event or concert, ~~information content of~~ a new movie and ~~commercial content of~~ commercials for a new game are free of charge. Decoding of such ~~contents~~ content data does not need the public key, and the "extractor" properly decodes such ~~contents~~ content data without using the public key to thereby allow the users to enjoy the ~~contents~~ content data.

[0150] It is supposed that today's life style of ~~the~~ users ~~is~~ ~~often such that~~ includes waking up in the morning, turning the television set ON, ~~taking a~~ having breakfast while looking or listening a television programs such as news, and then going out ~~for~~ to work. Such television programs are scheduled and edited on the convenience of television stations, and it is thus hard to say that the users truly desire them. Or rather, ~~many of such~~ much of the information ~~are~~ provided in the programs is even unnecessary for the users.

[0151] By constructing now such entertainment system, ~~contents~~ content data matched to the user's taste are downloaded daily (or periodically) into the user's domestic client terminal device 2 while the user is sleeping.

[0152] ~~If~~ With the provision of such entertainment system, ~~is~~

~~constructed,~~ the life style of the user ~~will be such that~~includes waking up in the morning, checking the ~~contents~~content data downloaded ~~into its~~to the user's own domestic client terminal device 2, ~~and~~ obtaining desired information at a desired time, and then going out for work.

[0153]   It can thus be said that ~~the~~such entertainment system is most promising and ~~is strongly~~eagerly awaited, ~~for the construction~~ since it ~~can propose~~offers a new life style ~~for the~~to users.

[0154]   The embodiments described in the above are only part of the examples of the present invention. It is therefore to be understood that the present invention may be practiced ~~in any~~with modifications or enhancements that may ~~depending~~depend on the design or the like otherwise than as specifically described herein without departing from the scope and the technical spirit thereof.

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39

ABSTRACT OF THE DISCLOSURE

When ~~content~~content data is downloaded under a pull-type connection, a domestic client terminal device incorporates a schedule file supplied from a server machine, and the domestic client terminal device then accesses the server machine at the time specified by the schedule file, to thereby download the desired ~~content~~content data. When the ~~content~~content data is distributed under a push-type connection, the server machine accesses the individual domestic client terminal devices according to the schedule determined on the server machine side, and then distributes the desired ~~content~~content data.

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